

ABSTRACT

The present invention provides an organic semiconductor material which exhibits a high mobility, and excellent 5 solubility in solvents and oxidation resistance. The present invention also provides an organic semiconductor thin film exhibiting a high mobility, and an organic semiconductor device exhibiting excellent electronic characteristics. A transistor structure is formed by coating the silicon substrate 10 with a thin film of pentacene compound substituted halogens at 6 and 13 positions and aliphatic hydrocarbons at 2, 3, 9 and 10 positions, wherein the substrate is patterned beforehand with gold to have a source and drain electrodes.